Children's Participation in Urban Planning and Design: A Systematic Review

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Urban planning and design play a central role in determining the quality of the built environment and how families with children can access and use public space. However, there remains an ongoing need to clarify the role in supporting children's involvement in planning. This paper carries out a systematic literature review of 30 publications between 1990-2017 to address and review the current state-of-the-art on participatory approaches within urban planning to create child-focused urban environments, Through the review, this paper aims to conceptualize existing approaches of involving children from different age groups, methods used, and the role ascribed to children in planning.

Keywords: Children, Urban Planning, Urban Environment, Participatory Approaches

Introduction

It is well known among scholars that urban environments have changed their relationships with children. This situation can be attributed to the creation of "adult only" environments with children being compelled to use places that are designed for adults within the paradigms of planning today (Karsten, 2005; Verstrate & Karsten, 2011; Carver et al., 2008; Karsten, 2002). Although children have the capacity and skills to cope with urbanized environments (Adams et al., 2017; Woolley et al., 1999), since the ratification of the UN's Convention on the Rights of the Child (UNCRC, 1989), scholars have been focusing on how to successfully involve children in planning their environments by giving them a voice that brings attention to their needs. The UNCRC (1989) recognizes that children (from infancy to age 18) are citizens who deserve the rights to survive, to develop, to be protected, to participate, and importantly, the right to recreation/ leisure/ play. Most of these rights need places and spaces, and it is here that planning and design can become the tools to enable these rights.

Children explore their environments by expanding exploratory circles around their homes; this exploration contributes to their physical and mental health (Aarts et al., 2012). Researchers from different disciplines and perspectives (medicine, health, urban planning, sports and child development) have studied the relationship between outdoor physical activity and children's overall development and well-being (Davison & Lawson, 2006; Weir et al., 2006; Strife & Downey, 2009; Audrey & Batista-Ferrer, 2015; Christian et al., 2015; Christian et al., 2017; Gill, 2008). However, the discussion around the places that are most suitable for children to play and socialize in (e.g. streets, parks, supervised playgrounds) is still ongoing. According to Verstrate and Karsten (2011), though streets are important places to play, they are not the most suitable places for children as they have to share these areas with many other users and activities. However, by sharing streets with other users' children (and their parents) expand their social networks and have a positive influence on their self-confidence. Additionally, Shackell et al. (2008) mention that the larger the social networks children have in their neighborhoods, the higher the trust parents have in the safety of that area. Because parents are central actors in a child's development, their perceptions and concerns can dictate how and where children are allowed to go. Owens (2017) for example defines this situation as discouragement of being alone in a city, and it results in limitations being placed on children's exploration. In short, increasing parental concerns about the safety and security of their children, as well as debates over the optimum place to play and socialize, have been affecting unsupervised exploration of urban environments by children.

In retrospect, the idea of playing has transformed from unsupervised play and socializing in streets and parks to semi-public supervised playgrounds. This transformation has affected the quality of life and quality of public spaces for children in cities. Today, children tend to be driven by their parents to indoor or outdoor activities, but prior to this historical shift, they were more outdoor-oriented (Karsten, 2005). As a result, children have become socially and physically invisible in cities. This situation has resulted in the exclusion of children from public spaces alongside the simultaneous creation of adult-only urban environments. Though professionals from the built environment have aimed to create child-focused environments, researchers have identified that there are some limitations to these spaces. These limitations include being off target, being ignored within official decision-making processes, little or no participation from children, and not reflecting contexts and needs of the children (Francis & Lorenzo, 2002). Research has highlighted that planning and designing with (instead of for) children should be actively encouraged (Francis & Lorenzo, 2002; Derr & Tarantini, 2016; Pawlowski et al., 2017). By

embracing better participatory planning approaches with children, the visibility and mobility of children can be enhanced.

This systematic review aims to answer the following research questions: (1) What are the participatory approaches used within urban planning to create more child-focused urban environments? (2) What is the role that urban planning and design can play in increasing awareness and enhancing child-focused urban environments? This paper develops a conceptual theoretical framework derived from intentions of planning; the process of planning; methods used; and outcomes of planning with children. The aim of developing this framework is to demonstrate the relationships between intentions and the actual process of planning with children; transformation of methods used over the last decades; and the relation between methods and overall results in achieving child-focused urban environments. This review aims to help urban planners, designers, architects, and policymakers to determine better pathways to enhance the inclusion of children within planning by identifying gaps within planning and design, methods that can be employed, and the importance of children's participation within the planning process.

Research Methodology

The research questions were addressed by conducting a systematic literature review (SLR) following the methodology described by Boland et al. (2014). Before starting the SLR process, a preliminary literature review was carried out to obtain an overview of the topic and establish the academic value of conducting a SLR. A search carried out on Scopus and Google Scholar databases for systematic literature reviews about child-focused approaches in urban planning and design returned only articles related to health issues of children who live in urban environments. Thus, this paper addresses this knowledge gap by systemically examining the existing literature regarding children's participation in urban planning and design.

Data Retrieval

Scopus was used as the primary database for identifying relevant publications. In order to develop a keyword string, general keywords were determined from the Scopus searches, and a keyword list was created and sorted based on frequency level. This frequency level resulted in a definition of primary, secondary, and tertiary keywords. As a result, "child" or "children" and "participation" were defined as the primary keywords; "urban," "design," "public," and "planning" were defined as secondary. The others were identified as tertiary keywords, and not added to the keyword string. The final string used in the Scopus search included primary and secondary keywords were identified as ("child*" AND "urban" AND ("planning" OR "design") AND "participation") AND PUBYEAR >1990. This query was carried out within article title, abstract, and keywords and it returned 535 publications limited to publications after the UNHCR ratification. The search included book chapters and peer-reviewed conference papers and journal articles but did not include masters or PhD dissertations.

Inclusion and Exclusion Criteria

In order to address the aforementioned research questions, studies were included if they a) are published in English; b) report primary or secondary data from participatory studies that involved children (0-18) and/or their families; and c) contained qualitative data that is sufficient for assessing the role of any domain of urban planning in child-focused visions of urban environments. In keeping with relevant literature in this area, the term "urban environments and public spaces" is defined as public spaces in any suburb and city center. Studies were excluded if

they were published before 1990. The inclusion criteria are further detailed in the PICOSS table **(Table 1)**.

Table 1: PICOSS table for Inclusion Criteria

REVIEW QUESTION	**MAIN QUESTION:** What is the current role of urban planning and design in child-focused vision of urban environments? **SUB-QUESTIONS:** What are the domains of research within child-focused urban planning? What are the approaches of urban planning and design within child-focused urban environments? How are children and communities involved in the planning of child-focused urban environments?	• Policy domain? • Social domain? • Spatial domain? • Participatory approach? • Participatory action research? • Co-production? • storytelling? • photo voice? • participatory video? • mapping?
POPULATION	Children (0-18) who live in urban areas: toddlers (ages 0–3 years); preschoolers (ages 3–5 years); school-aged children (ages 6–11 years); adolescents (ages 12–18).	
INTERVENTION	The role of urban planning and design: any domain of urban planning and design which has a role in child-focused vision of urban environments and public space.	
COMPARATOR	No comparison.	
OUTCOMES	Any positive or adverse child-focused urban environments-based outcomes related with any domains of urban planning, any subjective outcomes identified through analysis of child-focused vision of urban environments and public spaces.	
STUDY DESIGN	Qualitative Study. Participatory Research Methods. Primary or Secondary Data.	
SETTING	City: any suburbs' or city center's public spaces.	

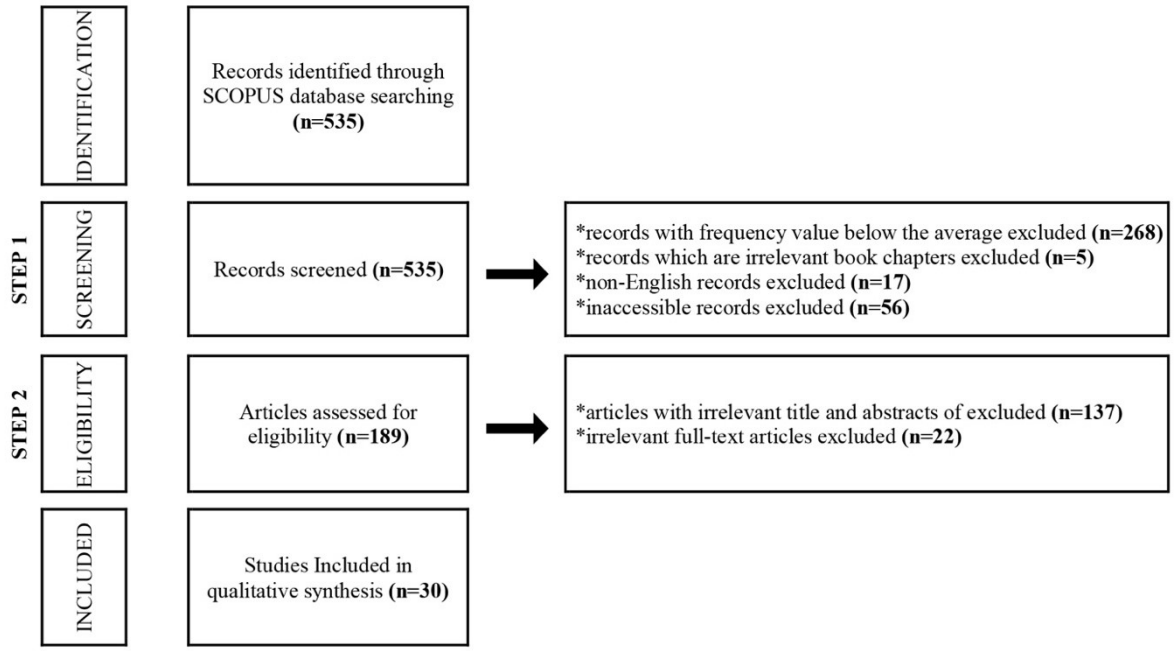
Filtering Results

The final search provided 535 publications following which an elimination process was carried out. In the first elimination step, 268 results were excluded based on their frequency being below the average value (n=11). This frequency was retrieved from keywords within the publications' title, abstract, and keywords. Additionally, 56 results were excluded because they were not readily available to the researcher, 5 results were excluded because they were irrelevant book chapters, and 17 results were excluded because they were not published in English. At the end of the first elimination step, 189 publications (including peer-reviewed journal articles, conference papers, and book chapters) remained.

In the second elimination step based on the relevance of publications, titles and abstracts of 189 publications were assessed, and 52 potential publications were retained. The full-texts of the remaining 52 publications were obtained. After applying the inclusion criteria to the full-texts of 52 publications, 11 publications were eliminated due to none of their outcomes originating from the domain of urban planning; 8 were excluded because they did not adopt a participatory methodological design; 2 publications were eliminated because they pertained to rural environments; and 1 publication was eliminated for not having a participatory study design with

children. As a result, 22 results were eliminated because they were not relevant to the research questions, resulting in a final sample of 30 publications included in this systematic literature review. The stages of exclusion can be seen in **Table 2**.

Table 2: Identification of Included Studies in PRISMA Flow Diagram



Results of the Review

Analysis of the included papers is presented in two steps. The first is a quantitative analysis which answers the "who, when and where" questions. The aim of this analysis was to interpret the institutional and geographical distribution of the focus on children's participation. The second step is a qualitative analysis of the focus and intentions of these papers, which answers this review's research sub-questions. The following section presents an overview of the most common domains, approaches, and methods of research within the practice of planning with children.

Findings of the Review (Quantitative)

The publication dates of the 30 studies ranged from1995 to 2017 (**Appendix A**). There has been a slight increase in publications focused on children's participation in urban planning since 1995, but within the last three years, there has been a substantial growth within the field with 11 new publications. The studies were mostly published by European publishers from the Netherlands and the UK, followed by North American publishers. Of the 30 papers reviewed, 12 publications were funded by non-governmental (58%) and governmental (42%) organizations. Interestingly, the last decade has seen a growth in studies funded by non-governmental organizations; this demonstrates a growing awareness about children's wellbeing in urban environments.

Close to half of the publications (n=13) reported results from multiple cases of secondary data. These publications aim to provide historical and critical reviews of children's participation in urban planning through different models such as children's councils and workshops. Furthermore, these publications adopt children's participation as the core of the research. The majority of publications (n=17) utilized participatory approaches but can be distinguished based

on (1) data collection without any spatial outcomes/ interventions, (2) design process with children with spatial outcomes. For example, seven of the 17 studies can be defined as experimental interventions inspired by community-based participatory research with a final product (redesign of a piece of a neighborhood or changing regulations), and which include data collection processes with children. Ten of the 17 studies provide in-depth explorations of children's wellbeing and needs from the built environment, investigating associations between children's wellbeing and their environments. Herewith, it can be said that the practice of planning with children leading into practice is still rare. This demonstrates that data extraction is the primary aim of the practice of planning with children rather than pursuing research through a transformation of data collection into practice.

The majority of publications were authored by individuals at research and higher education institutions (93%) and had first authors from North American (30%) and European (30%) institutions. There was a concentration of publications by authors from institutions in the USA (9 publications) and in Europe (21 publications) within the context of involving children in the creation of child-focused environments. This can be the result of a geographical accumulation of this research area, but also demonstrates the match between interest/achievements on child-friendliness of European cities and the research on this topic.

Institutional affiliations of the first authors ranged over a wide field. There were ten different research areas including law, economics, and sports. Unsurprisingly, the vast majority of publications originated from departments in environmental design, but the wide range of the fields highlights the interdisciplinary nature of the research area.

Findings of the Review (Focus & Intentions within Planning with Children)

By looking back at more than three decades of planning with children, Francis and Lorenzo (2002) outline a historical shift in children's participation in planning and design, moving from designing *for* children to designing *with* children by sharing power and responsibility. This study also identifies that the approach has become more proactive over time, looking to engage various actors (Francis & Lorenzo, 2002). Drawing from the literature review, this section of the paper focuses on the different approaches to the conceptualization of children, the process where children have the chance to shape their environments, the different approaches to the research, the outcomes of the research focused on, and methods used to engage children.

Conceptualization of Children

How children are conceptualized is based on trends within planning approaches and concepts. The studies included in this review varied in regard to how they treat children: as the bearers of needs and skills, the possessors of rights, consultants to educate adults, learners, and laborers **(Appendix A)**. The most common way of conceptualizing children within the studied literature was accepting children as consultants to educate adults (n=16), followed by treating children as citizens who are possessors of equal rights (n=10). However, these different conceptualizations yield different results: the first embraces children as educators for adults, while the second requires children to go beyond the role of educator to become active participants in the planning process.

When children are involved in the practice of planning, they are frequently treated as both educators and learners at the same time. This means that there are mutual benefits and learning opportunities for both children and adults (as documented by e.g., Derr & Tarantini, 2016; Wilks

& Rudner, 2013). This transforms the practice into a collaboration between children and adults in different roles and provides an opportunity for children have a voice in shaping their environments. Within the identified literature, accepting children as consultants to educate adults was widespread. In this context, children are treated as partners and collaborators of the process (Adams et al., 2017; Pawlowski et al., 2017, researchers and environmental change agents (Malone, 2013), clients (Racelis & Aguirre, 2005), and active participants with the aim of educating adults (Francis & Lorenzo, 2002; Francis & Lorenzo, 2006; Ito et al., 2010; Nelson, 2008; Oliver et al., 2011; Severcan, 2015; Woolley et al., 1999). Additionally, children can become emotional laborers in the process of planning, as seen through the work of Bosco and Joassart-Marcelli (2015). They focus on the problematic side of only involving children as "consultants" rather than individuals with ideas and knowledge.

Children, when accepted as citizens, have the right to have a voice in decisions impacting their lives (Benninger & Savahl, 2016), to share their ideas and views about what constitutes good urban outcomes (McGlone, 2016), to be a stakeholder in planning and management of public space (Haider, 2007), to contribute to the place they inhabit (Derr & Kovács, 2015), not to be counted as unacknowledged outsiders (Spencer & Woolley, 2000), but to be regarded as equal to adults (Breitbart, 1995; Corsi, 2002; Horelli, 1997; Nieuwenhuys, 1997; Scholten et al., 2017; Simpson, 1997;). All of these rights align with Article 12 of UNCRC (1989) which establishes children's participation and inclusion into any issue related to them.

Accepting children as citizens usually combines the notion that children are the bearers of specific needs and skills, and this combination distinguishes them from adults. This notion puts special attention on the practice of planning with children. In this context, children are accepted as designers (Yao & Xiaoyan, 2017), acute analysts (Cunningham et al., 2003; Horelli & Kaaja, 2002) and experts (McGlone, 2016) of their environments. They are also viewed in the literature as silent spectators (Chatterjee, 2015), a distinct group with specific needs (Haider, 2007), a parameter for the quality of life of all citizens (Corsi, 2002), and a social category to themselves (Alparone & Rissotto, 2001). It can be inferred that the conceptualization of the child is critical within research that affects the process of planning with children.

Process of Planning with Children

In the 30 papers included in this review, the practice of planning with children is highlighted as being as important as the field of intervention (i.e., social, spatial, policy, or learning). The execution of the practice of planning with children brings along requirements such as collaboration that involves a high degree of diversity of stakeholders and disciplines and strong communication involving a high level of dialogue.

The focus on the process itself encourages common and case-specific challenges in the participation process and its potential benefits. The practice of planning with children is a process of collaboration that is connected with achieving a high degree of diversity among the participants (Corsi, 2002; Derr & Kovács, 2015; Nelson, 2008; Pawlowski et al., 2017; Racelis & Aguirre, 2005; Scholten et al., 2017). While planning processes with children are structured around collaboration as a presupposition, collaboration can occur in the process even if it was not the original intent (Scholten et al., 2017).

Besides collaborations among actors, participatory activities also occur within the context of an interdisciplinary collaboration process that involves disciplines such as geography, planning, art, history, and architecture (Breitbart, 1995). According to Pawlowski et al. (2017), the practice

of planning with children challenges interdisciplinary collaborations by bringing different disciplines together to achieve a joint aim. In addition to this, the literature revealed that multidisciplinary collaboration between various fields is common. The most common interdisciplinary collaboration occurs among scholars from environmental design and the social sciences. This kind of interdisciplinary collaboration in practice of planning and design with children delivers outcomes mostly seen through social interventions.

The practice of planning with children requires multiple perspectives and actors, including stakeholders, children, adults, design professionals, and decision makers. (Francis & Lorenzo, 2006). However, within the group of adults, parents are one of the most critical participants. By involving parents in the process, researchers can assess whether children's exclusion from public space is partly caused by parental fears. There is also a need to encourage parents to think about ways through which children can be made more visible within cities (Francis & Lorenzo, 2002) and, importantly, what is currently missing in this regard. Although the importance of having multiple levels of diversity within the stakeholder group is essential (Derr & Tarantini, 2016), researchers such as Bosco and Joassart-Marcelli (2015) have identified a possibility that the voices of children could be diluted when there are too many stakeholders involved. These concerns should be kept in mind when executing the practice of planning with children to ensure the process remains focused first and foremost on the wants and needs of the children.

Communication plays an important role and needs to be considered at every stage of the planning process, from idea formation to implementation and beyond (Corsi, 2002). This is because, in order to be willingly involved, children require a process that is explanatory and active (Alparone & Rissotto, 2001). Communication thereby becomes both a critical factor in the practice of planning with children (Alparone & Rissotto, 2001; Derr & Tarantini, 2016; Haider, 2007; Horelli, 1997) and can also be the outcome of the process (Corsi, 2002). Communication constantly needs translation from children's language to adult language (and vice versa) regardless of scale and age. This necessity requires the existence of an adult facilitator to coordinate the process, facilitate the communication, and create links between children and the institutionalized world (Alparone & Rissotto, 2001).

Shared power in the practice of planning with children is critical. When planning with children, the level of dialogue between the adult facilitator and child collaborators can also function to determine the sharing of power. For example, Derr and Tarantini (2016) caution against hierarchical relations within the practice of planning that can affect the active participation of child collaborators. When their ideas are not embraced, their words and emotions can become lost in the planning process and never be imported to the real world. To address this problem, Derr and Tarantini (2016) suggest that the planning process should involve the sharing of information, dialogue between parties, and reflection. Researchers and practitioners therefore need to enable children to share their ideas by creating effective and inclusive environments for participation.

Communication between parties can be facilitated through assisting adults where a shift in power-sharing is observed (Wilks & Rudner, 2013), with some limitations in terms of what these actors can and cannot do (Alparone & Rissotto, 2001; Bosco & Joassart-Marcelli, 2015; Corsi, 2002; Francis & Lorenzo, 2006; Nieuwenhuys, 1997). Though the assumption that children are not capable of acting in their own best interests is (still) widespread, the researcher/facilitator should play the role of mediator while avoiding being a figure of authority and control (Nieuwenhuys, 1997). In this manner, the facilitator can act as the bridge between the institutional world and the children's world by protecting the children's experiences from any possible

exploitation (Alparone & Rissotto, 2001). However, it is important that this is done without ignoring children's autonomy (Corsi, 2002) and by respecting children's views and values (Haider, 2007).

Approaches to Planning with Children

Based on the reviewed literature, three related approaches can be identified within the practice of planning with children. These are participatory planning research, participatory action research (PAR), and co-production. The order in which these approaches are presented here also reflects the frequency with which they occur in practice and the degrees to which children are involved in them. The studies included in this review mostly define their approaches as 'participatory planning' or 'participation in planning' (Alparone & Rissotto, 2001), which differ slightly from each other in terms of methods and research aims. Christopher Spencer in Bishop & Corkery (2017, p. iii) indicates that the intentions of this research can be "researching children's needs or turning such research into practice". McGlone (2016) uses what they refer to as 'the mosaic approach' in their research. Meanwhile, Bosco and Joassart-Marcelli (2015) use a wide range of methodologies and flexible approaches. What they all have in common is that the studies aim to discover the needs of children through children's participation within planning for urban environments.

Among these three approaches, participatory planning research can be defined as the action of planning or re-thinking exercises about urban environments with children. Although participatory planning research with children can provide a power-sharing platform that reduces barriers between researchers and children (Wilks & Rudner, 2013) and aims to give voice to children to collect their knowledge, experience, and perspectives (Derr & Kovács, 2015), Wilks & Rudner (2013) warn that this approach can include a tendency towards tokenistic consultation processes. Manipulation may also occur in which children's emotions are devalued through emotional geographies underlining children's participation (Bosco & Joassart-Marcelli, 2015). In contrast, examples from Pawlowski et al. (2017), Scholten et al. (2017), and Yao & Xiaoyan (2017) accept children as participants and central actors rather than informants through activities like building gardens, or games.

PAR, the second approach that is frequently adopted, is sometimes misused. If the practice of planning with children leads to a level of power sharing in decision-making, this could be classified as active research (Nieuwenhuys, 1997). However, consultation with children is not enough to constitute a PAR agenda with children. The point PAR aims to make is that children need to be empowered and encouraged to take action in the process, especially as PAR involves actors as active participants to take action and bring about the desired changes (Severcan, 2015). In this context, 'action' refers to collective action rather than individual, which is essential to discover collective desire (Nieuwenhuys, 1997). Furthermore, four studies within the reviewed literature (i.e. Adams et al., 2017; Derr & Tarantini, 2016; Malone, 2013; Severcan, 2015) define their approach as action research. Examples of PAR include community-based action research and a research workshop activity.

In practice, one step beyond PAR is co-production. While participatory research focuses on user involvement and listening to children's wants and needs, co-production is about making joint decisions and joint implementation. In other words, while it includes participation, co-production with children also involves children throughout the entire process rather than only at selected points. A crucial feature of co-production is the collaborative development of the project.

Ito et al. (2010)'s multifunctional landscape planning project exemplifies this approach. The project included children from the outset through workshops, culminating with a biotope constructed by children for a school garden. In addition to environmental learning and ensuring active participation, outcomes obtained through joint efforts (spatial and social) are also expected when planning with children through co-production.

Methods within Planning with Children

Identifying the most optimum method based on the age group of the children involved is a critical consideration when planning with children. Among the literature included in this review, four age groups of children were identified: toddler (1-3 years old), preschooler (3-5 years old), school-aged (6-11 years old), and adolescent (12-18 years old). The practices of participatory planning vary widely according to these age groups. These variances arise as the first two age groups (0-5 years old – toddlers and preschoolers) necessarily includes the involvement of (a) caregiver(s) as well (parents, grandparents, or child-minders). These children also require supervision and a targeted exercise that can determine the process and methods for engagement. In contrast, older children (6-18 years old) can be more independent and may require lesser supervision.

According to the selected literature, there is a correlation between approaches to the conceptualization of children's age groups and the methods used in the planning process. As seen in **Appendix A**, the older the children are, the more they have been accepted as citizens in these studies. This also leads to using more expressive and conversational research methods. While preschoolers and school-aged children are often conceptualized as consultants to educate adults, adolescents are regarded as adults or citizens. Among different age groups, school-aged children (6-11) are the most widely represented group in the reviewed literature. The least represented group is preschoolers (3-5 years old) with 2 studies, and toddlers (1-3 years old) with no studies involving children from these age groups. This can be identified as a gap as very young children are always with a caregiver/ parent and this needs to be taken into account.

Horelli (1997) reports that there is a paradigm shift in urban planning and design that allows researchers to design new methods; she defines six different methodologies utilized in the practice of planning with children. These are diagnostic, expressive, situational, conceptual, organizational, and political methods.

- Diagnostic methods are analytical tools for evaluating environmental and personal variable (e.g. questionnaire, interview, and observation);
- Expressive methods contribute to the communications between and within groups by encouraging participants to express their ideas (e.g. drawing and mapping);
- Situational methods form the basis for collective situations, making learning easier and visualizing current situations to make negotiation easier (e.g. discussion and field trips);
- Conceptual methods aid in abstract thinking and have the potential to enhance the learning skills of children (e.g. model making).
- Organizational methods support the implementation of results of the participatory activities (e.g. children's city council).
- Finally, political methods are tools used by participants that can affect policy and level of influence an individual/group can have on the process (e.g. writing letter to city council).

According to the review, when the methods were classified by age groups, expressive methods focused on visual expression have been intensively used in planning with children **(Appendix A)**. One of the most common expressive methods is drawing, which is used frequently with preschoolers and older children. For school-aged children, expressive methods are more expansive and include, photography, collage making, diary writing, mapping, and presentation are used. Benninger and Savahl (2016) report that visual methods are very effective with children and provide different forms of communication. They also highlight the importance of using a range of research methods when working with children to highlight that methods can determine outcomes. Derr and Tarantini (2016) state that media-based methods like photovoice cause participants to engage more actively while providing a platform for dialogue. They also report that children favor interactive methods such as model-making, which is a conceptual method. Discussion, as used in several of the studies included in this review (i.e., Bosco & Joassart-Marcelli, 2015; Chatterjee, 2015; Malone, 2013; Racelis & Aguirre, 2005; Wilks & Rudner, 2013) is the most-used situational method within the reviewed literature. Aside from expressive, situational, and conceptual methods, diagnostic methods such as informal observations and interviews are used for in-depth understanding of children and their needs (Chatterjee, 2015). Presentation, which is an expressive method, can inherit political and organizational method value when the presentation is given to governmental organizations such as city councils instead of being delivered within the research group. The presentation could be given by urban designers who are involved in the practice of planning with children (e.g., Derr & Tarantini, 2016) or by children themselves (e.g., Nelson, 2008). Furthermore, letters written by children to city councils (Derr & Tarantini, 2016) can also be regarded as a political method that has the power to affect policy-making.

Social, Spatial, Policy and Learning Outcomes

It is expected that within the process of planning with children, outcomes will emerge such as: gaining knowledge about social problems, social rights, and bureaucracy; acknowledging place caring; sense of self-development; and improved relationship with the institutional world. The following section outlines the outcomes derived from the review, which have the potential to enhance children's involvement in urban planning practices. This section also discusses the benefits children and the larger community can gain from participating in the urban planning process.

Through participation, children can enhance their sense of self by exploring their environment to be part of their larger community. Malone (2013) has found that, in contrast to the common belief that children favor watching television and playing computer games at home, children do like being outside and interacting with others. A benefit of interacting with others is that it helps children develop their sense of self. The notion of sense of self is frequently mentioned in studies by referring to self-efficacy (Benninger & Savahl, 2016; Racelis & Aguirre, 2005; Severcan, 2015); sense of pride (Benninger & Savahl, 2016; Breitbart, 1995); self-identity and sense of self (Benninger & Savahl, 2016); sense of civic responsibility (Haider, 2007); and sense of purpose and sense of hope (Racelis & Aguirre, 2005). All the concepts referring to the development of children's sense of self are expected to occur during the process or end of the process as a result of participation.

Although recent research on planning with children has focused on the process itself and frequently seeks outcomes from the social domain, this line of research has also delivered required spatial characteristics for child-focused urban environments. There are some specific places, such as one's home and the homes of friends and family, school and school-related places, community

centers, church, shopping centers, and sports fields that have importance in children's daily life (Benninger & Savahl, 2016; Oliver et al., 2011).

Interestingly, safety and mobility are the most studied and emphasized indicators within public space usage. Most authors from the reviewed literature agree that the feeling of safety and being able to reach safe public spaces impact the visibility of children (Adams et al., 2017; Francis & Lorenzo, 2002; McGlone, 2016; Oliver et al., 2011; Severcan, 2015; Woolley et al., 1999; Yao & Xiaoyan, 2017). However, Francis and Lorenzo (2002) and Yao and Xiaoyan (2017) believe that when parents fear their children could be unsafe in a situation, it drives them to provide their children with more structured, supervised activities such as sports and music. Francis and Lorenzo (2002) refer to these kinds of activities as "adultization of childhood" (p. 159). Children attach importance to socialization and request places for it, but the feeling of being unsafe, combined with lack of mobility opportunities, makes socialization and play difficult in urban areas. Therefore, places that are located close to home, which forms the heart of a child's life, are not only accepted as safer but also make moving to and from these locations more convenient (Francis & Lorenzo, 2006).

Along with safety requirements, children are in need of public spaces for play and socialization that are clean (Benninger & Savahl, 2016; Racelis & Aguirre, 2005; Yao & Xiaoyan, 2017), green (Adams et al., 2017; Benninger & Savahl, 2016; Bosco & Joassart-Marcelli, 2015; Chatterjee, 2015; Derr & Kovács, 2015; Derr & Tarantini, 2016; Francis & Lorenzo, 2002; 2006; Ito et al., 2010; Malone, 2013), unstructured and flexible (Bosco & Joassart-Marcelli, 2015; Francis & Lorenzo, 2006; McGlone, 2016), multi-purpose (Derr & Kovács, 2015; Francis & Lorenzo, 2002). Researchers have also shown the importance of having water-related activities, such as paddling, boating, swimming, or interactions in fountains or pools (Bosco & Joassart-Marcelli, 2015; Breitbart, 1995; Derr & Tarantini, 2016; Francis & Lorenzo, 2002 Ito et al., 2010). These spatial outcomes depend on the geographical and cultural context of the papers reviewed. However, providing clean, green, and unstructured public spaces for children (which is, in the end, beneficial for society at large) is considered a core asset of urban environments for children to utilize (UNICEF, 2012).

Children enjoy having adventures. This adventurous nature of children's experiences incorporates safety and risk factors which often contradict parental safety concerns. Flexibility and openness of unstructured activities within places are essential for children's engagement as well as their enjoyment. Unstructured settings support children's engagement in semi-structured play such as climbing, jumping, gardening, skipping rope, and writing with chalk more than traditional play settings do (McGlone, 2016). Having adventures in nature or natural surroundings and interacting with animals are appreciated by children (Malone, 2013). Places that are flexible in form, materials, and uses are also valued, as children prefer flexible, mixed-use places over mono-functional zoning (Francis & Lorenzo, 2006). Furthermore, children wish to interact with others from different age groups and cultures. Creation of these kinds of places requested by children is a continuum that requires a policy to perpetually provide updated spatial and social regulations for child-focused urban environments.

Building child-focused cities is not only about space, but also about policy and laws (Yao & Xiaoyan, 2017). To enhance the child-friendliness of cities, it is necessary to promote children's participation with proper approaches and to explore effective planning and design strategies. Policies are the key to guaranteeing desired outcomes that require explicit support from governments (Horelli & Kaaja, 2002). Empowering children by giving them a voice (Woolley et

al., 1999) – for example, through youth consultation committees, is considered as an excellent way to involve children in planning and design issues. These committees can also enable participation in their environments through policy at the national level (Simpson, 1997).

The practice of planning with children needs to embrace a diverse range of methods in order to reach children with different skills and interests (Derr & Kovács, 2015). For example, the practices that encourage children to think "out of the box" and offer solutions for complex problems about their environment (Scholten et al., 2017) are becoming increasingly important. Enhancing team-work and decision making, delivering environmental learning (an important outcome for creativity), enabling respect for cultural differences (Breitbart, 1995), and providing the opportunity to learn about local government, laws, and bureaucracy (Nelson, 2008) are some instances. These different outcomes delivered in learning gradually transform into life-long practice and values. For example, Wilks & Rudner (2013) speculated if children's learning from the practice of planning can then be transferred to the school curriculum to ensure continuity of the process and to reinforce official education. Additionally, the practice of planning with children could have learning benefits for other actors such as city council members, teachers, and research team members. Derr and Tarantini (2016) refer to this process as 'co-learning.' Co-learning helps adults make realistic assumptions about children's needs (Wilks & Rudner, 2013). As a result, the more children participate in planning activities, the more their knowledge about social issues grows (Alparone & Rissotto, 2001), place knowledge (Severcan, 2015) and institutional knowledge are expanded; the children thereby become more active and empowered (Malone, 2013).

Discussion and Conclusion

This systematic review resulted in (1) a comprehensive quantitative picture of the current studies focusing on the participation of children; (2) an effective way to conceptualize children in planning; (3) a list of requirements for successful practice of planning with children and its relation to sustainable communities; (4) discussion of the link between urban planning, methods, approaches, and outcomes for child-focused urban environments; (5) identification of existing gaps in the literature; and (6) examination of the role of policies and the link between policies, urban planning, methods, and approaches for further research. Detailed results can be seen from **Table 3**.

Table 3: Results of the Review

1	QUANTITATIVE PICTURE	This review provided evidence-based data on child-focused thinking and planning from 30 publications between 1990 and 2017. It was highly evident that over the last 10 years, children have become increasingly involved in urban planning, but their involvement level is contradictive. At the very least, there is a growing awareness about children's well-being in urban environments that is taken into account in different levels such as planning, design, and policy. This can be seen through publication rates, variety within the fields of study, institutions funding the research, funding rates and accumulation of funding opportunities in last decade, and the geographic spread of publications. These elements attest to the importance of child-focused visions of urban environments and the roles children play in this process.

2	CONCEPTUALIZATION OF CHILDREN	Conceptualizations of children dictated the design of the reviewed research as well as its outcomes. When children are conceptualized as citizens and bearer of skills, participatory urban planning and design can adopt the roles of mediation and action. For these actions to be successful, they need to take the following into account: the level of communication, shared information, dialogue, and reflection, and a shift in power-sharing from the adult to the child. As seen from the reviewed study outcomes, the majority of researchers focused on the process, not only the outcomes. This shows a tendency to attach importance to the process rather than the result itself. Also, it was not critical to have spatial outcomes from the process of planning with children because the process also has educational and practical outcomes for children (and adults). This leads to a process wherein although the adults are in charge, children are the guides to educate the adults. It appears the main issue is the need to educate adults to allow children to represent themselves. Accepting children (of all age groups) as citizens endows them with the rights that adults have, but institutional settings have yet to be adapted to reflect this capacity of children.
3	SUSTAINABLE COMMUNITIES	The issues considered necessary in the practice of planning with children are also qualities that are needed for sustainable communities. These issues include high levels of communication, a high degree of diversity among participants, and collaboration among both community members and between disciplines. In line with creating sustainable environments and communities, child-focused environments encourage multidisciplinary approaches, multiple actors, transparency, and sharing of responsibility with their creation. Hence the adage, 'what is good for children is also good for society at large'. In addition, the social, spatial, political, and educational outcomes obtained through the process of planning with children contribute to creating and maintaining communities.
4	SUCCESSFUL PRACTICE OF PLANING WITH CHILDREN	To achieve an active participatory process, the environment wherein these activities takes place needs to function to minimize the involvement of adults and employ more expressive (e.g., drawing, collage making, mapping, and presentation) and tactile (touch and smell) methods. These methods are also an indicator of a process that centralizes the role of children as leaders of the process rather than just consultants. This review demonstrates that there is a need for more exploratory and expressive approaches where children are in the center of the discourse with urban planning and design playing the role of mediator or tool. Children are the future, so for the future of cities, planning and design with children should play a more significant role in shaping cities.

5	EXISTING GAPS IN LITERATURE	A critical finding pertained to the age groups of the children involved, as toddlers were the least represented age group in the reviewed literature. The built environment is critical for the (psychological and physical) development of toddlers, and with little or no research within this area, this can be identified as a clear research gap. This gap can be addressed through interdisciplinary collaboration between the field of child development and the built environment (planning/design/policy) to include feedback from toddlers and their caregivers. As previously discussed, older children (age 5+), conversely, need to represent themselves rather than being represented by adults.
6	THE ROLE OF POLICY	The role of local, national and international policies is crucial for successful implementation of the practice of planning with children. There is a need for further research on policies from different levels and their success (or failure) in the implementation of children's involvement in planning. The combination of supportive policies and expressive approaches and methods within the practice of planning with children can encourage the creation of child-focused environments.

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Appendix A:

Legend primary approach secondary approach

No	Author (Year)	CHILDREN AS					design w/ or for them	methods in common	age group
		bearer of needs & skills	possessor of rights	consultants to educate adults	learners	labor			
1	Derr & Tarantini (2016)			children as social agents - mutual benefits	children as social agents - mutual benefits		w/	**Expressive Methods:** • Drawing	preschoolers: 3-5 years old children
2	Malone (2013)			children as researchers and environment change agents					
3	Oliver et al. (2011)			children as active agents				**Diagnostic Methods:** • Questionnaire • Interview • Observation **Expressive Methods:** • Drawing • Photography • Diary • Collage making • Mapping • Presentation **Situational Methods:** • Discussion • Field trips • GPS **Conceptual Methods:** • Model making	school aged: 6-12 years old children
4	Ito et al. (2010)			children as active participants					
5	Cunningham et al. (2003)	children as acute observers and analysts of their environment		children as consultants					
6	Racelis & Aguirre (2005)			children as clients					
7	Francis & Lorenzo (2002)			children as active participants			w/		
8	Woolley et al. (1999)			children as participants					
9	Pawlowski et al. (2017)			children as partners of the co-design process			w/		
10	Derr & Kovács (2015)		children as citizens who have rights to contribute to the places they inhabit						
1	Derr & Tarantini (2016)			children as social agents - mutual benefits	children as social agents - mutual benefits		w/		
11	Benninger & Savahl (2016)		children as citizens who have the right to have a voice in decision concerning their lives						
12	McGlone (2016)	children as the experts of their own lives and experience	children as active citizens with thoughtful views about what constitutes good urban outcomes						

13	Severcan (2015)			children as active participants for purposes of empowerment and taking action						school aged: 6-12 years old children
14	Bosco & Joassart-Marcelli (2015)					children as emotional labor				
15	Wilks & Rudner (2013)			children as valid informants of their own world.	children as valid informants of their own world.					
2	Malone (2013)			children as researchers and environment change agents						
16	Horelli (1997)		children as adults							adolescent: 12-17 years old children
17	Breitbart (1995)		children as citizens				w/	**Expressive Methods:** • Mapping • Photography • Presentation • Collage Making • Drawing **Situational Methods:** • Field trips • Meeting		
1	Derr & Tarantini (2016)			children as social agents - mutual benefits	children as social agents - mutual benefits		w/			
18	Adams et al. (2017)			children as collaborators who possess agency			for			
19	Scholten et al. (2017)		children as adults of future		children as adults of future					
20	Yao & Xiaoyan (2017)	children as designers								no age group info
21	Chatterjee (2015)	children as silent spectators					for			
22	Nelson (2008)			children as active participants to develop materials to evaluate the communities around their schools						
23	Haider (2007)	children as a distinct group with specific needs	children as important stakeholders in the planning and management of public space							no case study
24	Francis & Lorenzo (2006)			children as active participants						

25	Corsi (2002)	children as a parameter for the quality of life of all citizens	children as active citizens						
26	Horelli & Kaaja (2002)	children as sharp analysts of their settings							
27	Alparone & Rissotto (2001)	children as a social category							
28	Spencer & Woolley (2000)		children as citizens not as unacknowledged outsiders						no case study
29	Simpson (1997)		children as adults who possess many rights						
30	Nieuwenhuys (1997)		children as equal as researchers in the process						